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ABSTRACT

A comparison of the application of two current theories of stress to a particular stress pattern found in the Salish language Sooke is presented. Hammond's (1986) grid-like tree structure representation of stress is compared with Halle and Vergnaud's (1986) tree-like grid structure. Examples in the Australian language Maranungku show that, in Hammond's theory, stress is represented by tree structures that lack strong-weak labelling but with marks essentially equivalent to grid ticks. Maranungku examples used with Halle and Vergnaud's theory indicate that stress is represented by metrical grids that incorporate constituent structure. Consideration of the stress system of Sooke shows that its analysis is much more straightforward using Halle and Vergnaud's theory that posits stress conflation as compared to Hammond's theory. Examples show that, in Hammond's theory, stress is determined by building a left-headed unbounded ROB (revised obligatory branching) foot with a left-headed word tree, thus requiring an additional mechanism to determine over which syllable the head of the ROB foot is placed. The analysis within the Halle and Vergnaud framework avoids positing an additional mechanism that determines over which syllable the head of the ROB foot is placed. Examples of stress in Sooke can be taken as evidence to support the grid-like theory. (CB)

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Stress Conflation: Evidence From Sooke

Stuart Davis
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One of the central debates in metrical theory is whether the parallel representations of stress that Liberman & Prince (1977) proposed--metrical trees and metrical grids-- are necessary. In the work on metrical phonology that was published right after Liberman & Prince's work, essentially two schools developed: one that posited only metrical trees for the representation of stress (Kiparsky 1979 and Hayes 1981) and the other that posited only metrical grids for the representation of stress (as in Prince 1983 and Selkirk 1984). Both the tree only representation of stress and the grid only representation of stress in these works have certain shortcomings. For example, accounts that incorporated only metrical trees (with strong-weak labelling) had certain problems in dealing with defining stress clash--which seems to be defined better in terms of a particular grid formation (e.g., two marks adjacent on their row, with no intervening mark on the immediate lower row.) In fact, this led Hayes (1984) to argue that both metrical trees and metrical grids are needed. Hayes concluded that trees and grids are not parallel representations of stress, but rather represent different things: metrical trees represent linguistic stress and metrical grids represent rhythmic structure. These "... have different functions and obey different laws--hence neither is dispensable." Thus we see that a major problem with the original tree only representation of stress had to do with defining stress clash.

Now, the major criticism levelled against the grid only representation of stress is that it gets rid of metrical constituents like the foot. What has become the standard argument for the need of metrical constituents comes from cases where stress vowels delete. When a stress vowel deletes, often, the stress itself does not delete, but rather the stress shifts onto the neighboring syllable within the same constituent (i.e., within the same foot). This

pattern of shifting would be unexpected in a theory without constituents. For example Al-Mozainy, Bley-Vroman, and McCarthy (1985) discuss the Bedouin Hijazi dialect of Arabic spoken in Saudi Arabia, in which, when the stress vowel deletes, the stress is shifted onto the syllable to the right. In this Arabic dialect, stress assignment requires the construction of binary left-headed feet; thus, when the stress vowel deletes, the stress shifts to the right-remaining within the original foot. In the unpublished work of Halle & Vergnaud 1986 they point to several cases exactly like this--i.e., the stress vowel deletes but the stress does not delete, rather it is shifted onto the adjacent vowel within the foot. This phenomenon, Halle & Vergnaud argue, is totally unexpected in a framework without metrical constituents (such as in the grid only account of Prince 1983).

Thus we see that the metrical grid only representation of stress and the metrical tree only representation of stress (as put forward in the early 1980's) have the shortcomings discussed. This brings us up to current work.

In this paper I want to compare the application of two current theories of stress to a particular stress pattern found in the Salish language Sooke. Both these two recent theories try to avoid the shortcomings that I have just discussed, but they do so in a slightly different way.

The two theories that I will compare are Hammond"s (1986) grid-like tree structure representation of stress with Halle & Vergnaud's (1986) tree-like grid structure representation of stress. In Hammond's (1986) theory stress is represented by tree structures that lack strong-weak labelling but with marks essentially equivalent to grid ticks. An example of this is shown in (2) for the Australian language Maranungku. In Maranungku, the first syllable has main stress with secondary stresses falling on every other syllable after that. Sample data are provided in (1).

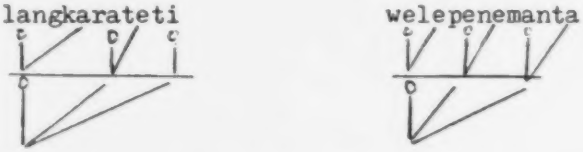
(1) tíralk 'saliva'
mérepèt 'beard'
yángarmàta 'The Pleiades'
lángkaràtetì 'prawn'
wélepènemànta 'duck' (sp.)

The analysis that Hammond would propose for this stress system is given below in (2).

(2) a. Build left-headed feet from left-to-right.
b. Build a left-headed word tree.

Sample trees are given in (3).

(3) langkarateti welepenemanta



Additionally, Hammond utilizes a certain type of obligatory branching foot which he calls an ROB foot (ROB = Revised obligatory branching). An ROB foot is a foot whose head is restricted (that is, the strong part of the foot can only dominate a syllable of a certain type), but the nonheads are unrestricted. For example, in Khalka Mongolian, stress falls on the leftmost long vowel of the word or else (if there are no long vowels) on the first syllable. Some data are given in (4).

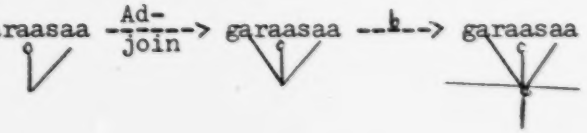
(4) bosgúul 'fugitive'
garáasaa 'from one's own hand'
xótolbor 'leadership

To capture this stress pattern Hammond proposes an analysis that makes use of ROB feet. His analysis is given in (5) with derivations shown in (6).

(5) a. Build an unbounded left-headed ROB foot.
b. Build a left-headed word tree.

(Additionally, adjoin unfooted syllables before word tree construction.)

(6) a. garaasaa --a--> garaasaa --Ad-join--> garaasaa --b--> garaasaa



b. xötəlbərə --a--> NA --b--> xötəlbərə

In Halle & Vergnaud's (1986) theory stress is represented by metrical grids that incorporate constituent structure. To see how this works consider Halle & Vergnaud's analysis of stress in Maranungku, in which main stress is on the initial syllable and secondary stress on every other syllable thereafter. They would posit an analysis like that in (7)

(7) a. Stressable elements are vowels.
b. On line 0 construct binary left-headed constituents from left-to-right.
c. On line 1 construct an unbounded left-headed constituent

Sample derivations are given in (8).

(8) a. welepenemanta --b--> welepenemanta --c--> welepenemanta

b. langarateti --b--> langarateti --c--> langarateti

For Khalka Mongolian in which stress falls on the leftmost long vowel or on the first syllable (if the word has no long vowel), Halle & Vergnaud would offer an analysis like that in (9).

(9) a. Stressable elements are vowels.
b. Assign line 1 asterisks to long vowels.
c. On line 1 construct an unbounded left-headed constituent.
d. Conflate lines 1 and 2.

Derivations are given in (10).

(10) a. xötəlbərə --b--> xötəlbərə --c--> xötəlbərə

b. garaasaa --b--> garaasaa --c--> garaasaa --d--> garaasaa

Stress conflation is a mechanism that eliminates potentially occurring secondary stresses. Certain vowels get marked with an extra asterisk in order to determine the location of primary stress. Once primary stress is assigned these marked vowels will not be realized with any secondary stress; conflation occurs, and these vowels end up on the surface as stressless.

Now I want to consider the stress system of Sooke and show that the analysis of it is much more straightforward in Halle & Vergnaud's theory that posits stress conflation as compared to Hammond's theory. According to the unpublished work of Demers (1972), Sooke has the stress hierarchy in (11) (ignoring some stress attracting suffixes):

(11) a. Stress the leftmost closed sylllable with a full vowel.
b. Stress the leftmost syllable with a full vowel.
c. Stress the leftmost closed syllable with a reduced vowel.
d. Stress the initial syllable.

Some data are given in (12). (Forms are shown before late rules of vowel reduction and deletion have applied.)

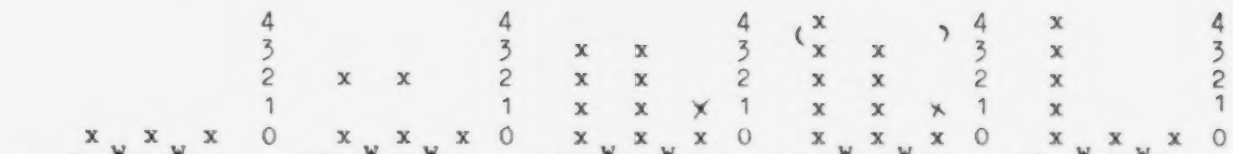
(12) ʔáx̣ʷtixʷsən 'I'm bringing it there'
ʔitátŋ 'to be sleepy'
qʷínəqʷs 'body hair'
ʔayə́lt 'to put something on'
qʷəčə́nt 'shark'
kə́ptən 'eyelash'

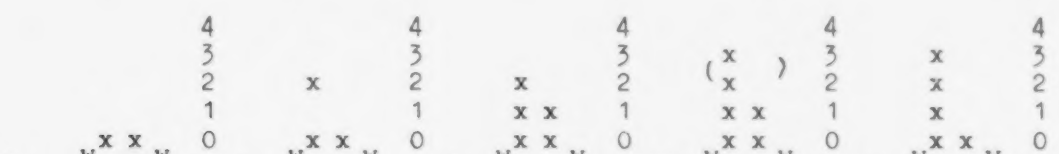
In Halle & Vergnaud's framework stress would be assigned as follows:

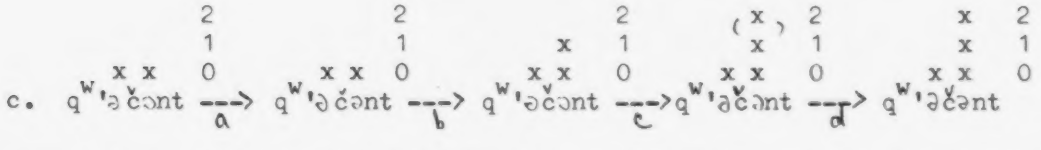
(13) a. Assign a line 2 asterisk to syllables with full vowels.
b. Assign an extra asterisk to any closed syllable.
c. Construct an unbounded left-headed constituent on the top line.
d. Conflate.

Derivations are provided in (14).

(14) Derivations



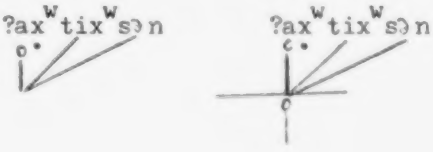




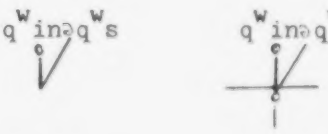
Sooke, then, is one more additional language that requires stress conflation.

In Hammond's theory Sooke stress would be determined by building a left-headed unbounded ROB foot with a left-headed word tree--identical to the analysis of Khalka Mongolian. This is seen in (15).

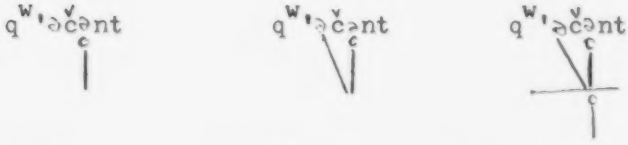
(15) a. ʔax̣ʷtixʷsən



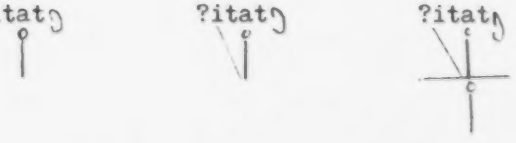
b. qʷinəqʷs



c. qʷəčənt



d. ʔitatɲ



On this analysis an additional mechanism would be needed to determine over which syllable the head of the ROB foot is placed. For example, in the second word the head of the foot is placed over the word initial syllable which has a full vowel, but it is not placed over the following closed syllable. However, in the final word the head of the ROB foot is not put over the word initial syllable (which has a full vowel), rather it is put over the closed syllable. The analysis within the Halle & Vergnaud framework avoids positing an additional mechanism that determines over which syllable the head of the ROB foot is placed. It does make use of stress conflation, but this seems independantly motivated for languages like Khalka Mongolian and Egyptian Arabic.

The fact that the Halle & Vergnaud analysis avoids positing any additional mechanism for Sooke stress can be seen as providing support for their grid-like theory. However, we leave for future investigation the question of whether or not all occurring stress systems are expressible in terms of Halle & Vergnaud's grid theory.

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